IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

REPLY BRIEF FOR THE APPELLANTS

Ex parte Esa MALKAMAKI, *et al.*

REDUNDANCY SELECTION STRATEGY SCHEME

Serial No. 10/732,745
Appeal No.:
Group Art Unit: 2112

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In re the Appellant:

Esa MALKAMAKI, *et al.* Appeal No.:

Serial Number: 10/732,745 Group Art Unit: 2112

Filed: December 11, 2003 Examiner: Samir Wadie RIZK

For: REDUNDANCY SELECTION STRATEGY SCHEME

REPLY BRIEF

June 5, 2008

I. INTRODUCTION

This Reply Brief is filed in response to the Examiner's Answer dated April 15, 2008. In that Examiner's Answer, while no new grounds of rejection are made, comments and explanations are provided which are tantamount to new points of argument. This Reply Brief, therefore, is submitted to address these new points of argument, and to clarify why claims 1-30 of the pending application should be considered to be patentable over US Publication No. 2004/0228320 (Laroia) viewed by itself or in combination with Applicants' allegedly admitted prior art from the specification of the present application, and, therefore, should be found by this Honorable Board of Patent Appeals and Interferences to be allowable.

This Reply Brief addresses a few of the deficiencies of the Examiner's Answer. Appellant's Appeal Brief, however, is maintained, and failure to repeat the arguments contained therein, or to address one or more argument set forth in the Examiner's

Answer should not be construed as waiver or an admission. The Appeal Brief speaks for itself, and this Reply Brief merely supplements the Appeal Brief to address certain aspects of the Examiner's Answer.

II. SUMMARY OF EXAMINER'S ANSWER

At sections 1-8 and 11, the Examiner's Answer generally favorably indicated compliance of the Appeal Brief and did not add any additional information.

At section 9, the Examiner's Answer repeated sections 3-29 of the Office Action.

At section 10, the Examiner's Answer provided some responses to certain of the arguments set forth in the Appeal Brief.

III. STATUS OF CLAIMS

Claims 1-30, all of the claims currently pending in the present application, are the subject of this appeal. Claims 1, 2, 7-17, 21-23, and 25-30 were rejected under 35 USC §102(e) as being anticipated by US Publication No. 2004/0228320 (Laroia). Claims 3-6, 18-20, and 24 were rejected under 35 USC §103(a) as being obvious in view of Laroia and Applicants' allegedly admitted prior art from the specification of the present application. These grounds of rejection are erroneous, as discussed in the Appeal Brief and will be discussed at greater length in Section (IV) of this Reply Brief.

IV. RESPONSE TO SECTION (10)

From pages 10-12, the Examiner's Answer contained various responses to arguments, as Section (10) of the Examiner's Answer. The Appeal Brief is capable of standing on its own, and provides a sufficient, unrebutted basis upon which the rejections should be reversed. Nevertheless, for the convenience of the Honorable Board, some additional comments, particularly addressing the somewhat new ground of rejection are provided below.

Appellants respectfully submit that each of pending claims 1-30 recites subject matter which is neither disclosed nor suggested by over US Publication No. 2004/0228320 (Laroia) viewed by itself or in combination with Applicants' allegedly admitted prior art from the specification of the present application. As outlined above, the final Office Action took the position and the Reply brief maintains that Laroia anticipates each and every element of the independent claims. Appellants respectfully disagree.

As discussed in Appellant's Appeal Brief, Appellant respectfully submits that Laroia fails to disclose or suggest all of the elements of claim 1. For example, Laroia fails to teach or suggest, at least, "selecting at least one of said set of predetermined sequences" of the provided redundancy parameters, as recited in independent claim 1. As further provided in independent claim 1, based on the selected at least one sequence providing said redundancy parameters transmitted to a terminal device, the terminal device performs an automatic repeat request

processing. As disclosed in the present application, the "selection" refers to choosing being one of the predetermined sequences of the redundancy parameters. This technical limitation provides a significant technical benefit of enabling a network operator to select redundancy version strategies to be used by the terminal device, while little signaling is required between the network and the terminal device.

In the Response to Argument of the Examiner's Answer at Section (10), it is asserted that Laroia discloses "selecting at least one of said set of predetermined sequences" of the provided redundancy parameters" (Examiner's Answer, page 10). Appellants respectfully disagree with this assertion, and continue to note that there is no selection (*i.e.*, choose) between the different predetermined sequences of the redundancy parameters. The Examiner's Answer essential urges that a use of any single sequence of redundancy parameters would satisfy the limitation of selecting between multiple sequences of redundancy parameters. This claim interpretation adapted in of the Office Action and the Examiner's Answer improperly and illegally removes the selection limitation.

In particular, the Examiner's Answer alleges the new argument that Laroia at paragraph [0101] discloses the determining (selection) of a sequence of the redundancy parameters for transmission. Applicants urge that this assertion in the Examiner's Answer is technically and legally incorrect. Applicants not that Laroia at paragraph [0101] described truncation, or shortening, during of a transmission

of **single** sequence of redundancy parameters. In other words, Larioa discloses that, given a specific, single sequence of redundancy parameters, the transmitter can modify this single sequence as necessary for transmission over a channel. Although the Examiner's Answer asserts that this truncation of a single sequence is equivalent to the recited selection of one of the predetermined sequences. Applicant urge that there is simply no selection, or choose, between different predetermined sequences of redundancy parameters as recited in claim 1 of the present application. Furthermore, Applicants note that this analysis is inconsistent with another limitation in claim 1 of providing a set of predetermined sequences of redundancy parameters. In particular, the supposed selection alleged in the Examiner's Answer does not relate to one of the provided predetermined sequences.

Applicants further note that this analysis of the selection of predetermined sequences of redundancy parameters is inconsistent with the other analysis in the Examiner's Answer. For example, the Examiner's Answer notes that Laroia provides a block of redundant bits 512 including a first part 514, a second part 516, a third part 518, and a fourth part 519. The Examiner's Answer then asserts that parts 514, 516, 518, 519 correspond to the "predetermined sequences of redundancy parameters" recited in claim 1 of the present application. Applicants note that the signal truncation in paragraph [0101] of Laroia does not relate to a selection, or choose, between one of the parts 514, 516, 518, 519. Applicants

therefore urge that the Examiner's Answer has selectively applied Laroia in an inconsistent and technically incorrect manner.

As discussed in Appellant's Appeal Brief, there is no selection in Laroia between predetermined sequences of redundancy parameters. Instead, Laroia generally describes a repeat request method and apparatus in which different NAK signals are used to indicate different relative levels of success in regard to an unsuccessful attempt to decode a received signal. An ACK signal is used in the case of successful decoding. FIG. 5 illustrates an example of using incremental redundant codes, e.g., incremental redundant LDPC codes, in accordance with the invention. As shown in FIG. 5 of Laroia, in a first traffic segment 520, the information bits 510 and the first part of the parity check bits 514 are transmitted. See paragraphs [0078]-[0080]. The combination of the coded information bits 510 and the first part 514 of the parity check bits form a first set of encoded information which is transmitted. The remaining parity check bits, the second through fourth parity check bits, form a set of redundant information, which is stored and used in the event of a NAK.

In essence, Applicants note that Laroia provides that if the receiver 522 with its decoder 524 cannot decode the information bits 510 and sends a NAK 526, the transmitter 502 sends the second part of the parity check bits 516 in a second traffic segment 528. The receiver 522 uses both the received segments 520, 528 in the decoding process in an attempt to decode the information bits 510. If the

receiver 522 still cannot decode the information bits 510 as evidenced by the receiving device 522 sending another NAK 530 in an acknowledgement segment corresponding to the second traffic segment 528. Then, the transmitter 502 transmits the third part of the parity check bits 518 in a third traffic segment 532. The receiver 522 should use some or all of the received segments, e.g., segments 520, 528, 532 to decode the information bits 510. If the receiver 522 decodes the information bits 510 successfully at some time, then the transmitter may discard the unused parity check bits.

There is no selection of at least one of the set of predetermined sequences of redundancy parameters in Laroia. Instead, Laroia provides a successive transmission of all redundancy parameters until reaching a **successful** decoding. Laroia provides a block of redundant bits 512 including a first part 514, a second part 516, a third part 518, and a fourth part 519. The first part of the parity check bits 514 is transmitted in combination with the information bits 510. Then, each remaining part of the parity check bits is successively transmitted in the event of a NAK whenever the receiver 522 is unable to decode the information bits 510 associated with the transmitted parity check bits. Therefore, the essence of the description of Laroia is to achieve an efficient automatic repeat request in a multiple access wireless communications system by providing a large block of parity check bits 512 associated with the big parity check matrix used by the transmitter (*See* Laroia, *for example,* at page 9, lines 8-10).

Applicants note that there is no "selection" between the parts 514, 516, 518, 519 in Laroia, which are identified in the Examiner's Answer as the recited "predetermined sequences of redundancy parameters" of claim 1 of the present application. Instead, as described above, the parts 514, 516, 518, 519 are transmitted sequentially, such that the first part 514 is first transmitted, and then only later, the second part 516, third part 518, and fourth part 519 are transmitted in turn. There is certainly no selection between the parts 514, 516, 518, 519 in this sequential transmission scheme. Likewise, the Examiner's Answer continues to cite to a first traffic segment 520 and a second traffic segment 528 as examples of a selection. As noted above, these segments relate to sequential transmission and not a selection between different predetermined sequences of redundancy parameters.

The Examiner's Answer at page 12, paragraph 4 further alleged that "selection" may implemented on many ways and FIG. 8 and the supporting paragraph [0102] discloses using a three level-NAK acknowledgment to allegedly "select" the redundancy bits. Applicants note that, as described above in great detail Laroia does not does disclose "selection of at least one of the predetermined sequences of redundancy parameters" as recited in claim 1 of the present application. Instead, as described above, Laroia describes enforcing a pre-established transmission order for predefined segments of a single sequence of redundancy parameters. In Laroia, there is simply no selection in a pre-ordered

sequential transmission. Applicants further note FIG. 8 and paragraph [0102] similarly do not describe any selection between different sequences of redundancy parameters. Instead, as depicted in FIG. 8, a first portion of the redundant bits are transmitted a portion 810 of a first transmission 860, that includes a level 2 NAK, and second and third portions of the of the redundant bits are transmitted in a portion 812 of a second transmission 862, having a first ACK 858.

Thus, the configuration proposed by Laroia is different from the recitations of the embodiments of the present invention recited in claim 1 in which the transmission of a selected predetermined sequence amongst a set of predetermined sequences of redundancy parameters differs from the successive transmission of redundancy parameters until reaching a successful decoding. Therefore, the automatic repeat request method and apparatus disclosed in Laroia do not anticipate the selection and the transmission of the selected at least one sequence to provide redundancy parameters recited in pending claim 1.

Accordingly, the analysis of the Examiner's Answer continues to be errant for the same reasons as the errant analysis in the Office Action and the Advisory Action. Accordingly, the rejection of claim 1 as being anticipated by Laroia cannot be supported by the rejections of record.

As discussed in Appellant's Appeal Brief, Laroia similarly fails to disclose or suggest "parameter generating means" as recited in claim 16, the "selection means" as recited in claim 23, "parameter generating unit" as recited in claims 28

and 29, and the "selecting unit" as recited in claim 30. Therefore, the rejection of these independent claims in view of Laroia is clearly improper and should be reversed. Likewise, dependent claims 2-15, 17-22, and 24-27 are patentable over Laroia for at least the same reasons that claims 1, 16, and 30 are patentable, and further, because these dependent recite additional limitations. Accordingly, it is respectfully requested that the rejection under 35 U.S.C. §102(e) in view of Laroia be reversed and these claims be allowed.

Applicants further note that Applicants' allegedly admitted prior art (AAPA) does not remedy the above-identified deficiencies of Laroia, and consequently the combination of Laroia and AAPA fails to disclose or suggest all of the elements of any of the presently pending claims.

As described in the Appeal Brief and AAPA generally describes uplink packet data of Wideband Code Division Multiple Access (WCDMA) systems covering radio transmission of data from a mobile unit or mobile terminal, called User Equipment (UE) in third generation terminology, to a fixed station, called Node B in third generation terminology. Here, the case of erroneous reception of data packets is handled by Radio Link Control (RLC) signaling. *See* paragraph [0003]. However, AAPA further provides in paragraph [0003] that such configuration is disadvantageous in that a retransmission will require relatively large buffers and will introduce significant delays. One of the technologies under investigation in connection with enhanced uplink data is fast H-ARQ, where the

packet retransmissions are handled at either physical layer or Media Access Control (MAC) layer and, thus, in principle at the Node B instead of the Radio Network Controller (RNC).

AAPA does not cure the deficiencies of Laroia. Similarly to Laroia, AAPA is silent as to teaching or suggesting, at least, "selecting at least one of said set of predetermined sequences, and transmitting information indicating the selected at least one sequence to a terminal device," as recited in independent claim 1, at least, "a receiver configured to receive information indicating a selected sequence of redundancy parameters, and a parameter generating unit, operably connected to said receiver." Accordingly, AAPA fails to disclose or suggest the above identified features of claim 1 with respect to which the combination of Laroia is deficient.

Furthermore, Applicants respectfully submit that the methodology disclosed in the present application is not admitted prior art, but merely represents an alternative solution that was found to be problematic for the reasons disclosed in the application.

As explained above and in the Appeal Brief, each of claims 1-30 recites subject matter which is neither disclosed nor suggested by the cited art of Laroia and AAPA. Therefore, Appellants submit that the final Office Action has failed to establish a prima facie case for anticipation or obviousness. For all of the above noted reasons, it is strongly contended that certain clear differences exist between the present invention as claimed in claims 1-30 and the prior art relied upon by the

Examiner. This final rejection being in error, therefore, it is respectfully requested that this honorable Board of Patent Appeals and Interferences reverse the Examiner's decision in this case and indicate the allowability of application claims 1-30.

V. UNANSWERED ARGUMENT(S)

The Examiner's Answer left many arguments unanswered. For example, as noted in the Appeal Brief, the methodology disclosed in the present application is not admitted prior art, but merely represents an alternative solution the was co-developed at the same time but was found to be problematic for the reasons disclosed in the application. Therefore, the rejection of claims 3-6, 18-20, and 24 under 35 USC §103(a) as being obvious in view of Laroia and Applicants' allegedly admitted prior art from the specification of the present application is clearly legally improper and should be reversed.

Arguments that were not answered by the Examiner's Answer should be taken as admitted, and form independent and alternative grounds upon which the rejection should be reversed as clearly improper.

VI. CONCLUSION

For all of the above noted reasons, it is strongly contended that certain clear differences exist between the present invention as claimed in claims 1-30 and the prior art relied upon by the Examiner. It is further contended that these differences are more than sufficient such that the present invention would not have been obvious to a person having ordinary skill in the art at the time the invention was made.

This final rejection being in error, therefore, it is respectfully requested that this honorable Board of Patent Appeals and Interferences reverse the Examiner's decision in this case and indicate the allowability of application claims 1-30.

In the event that this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees which may be due with respect to this paper may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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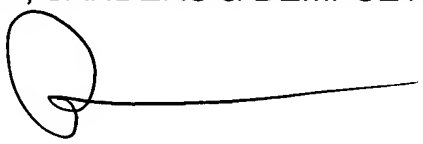

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